

SEDIMENTOLOGY OF THE NEOGENE ALMERÍA BASINS: AN ILLUSTRATED GUIDE.

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Tabernas basin

The temperate carbonates from the Tortonian-Messinian transition

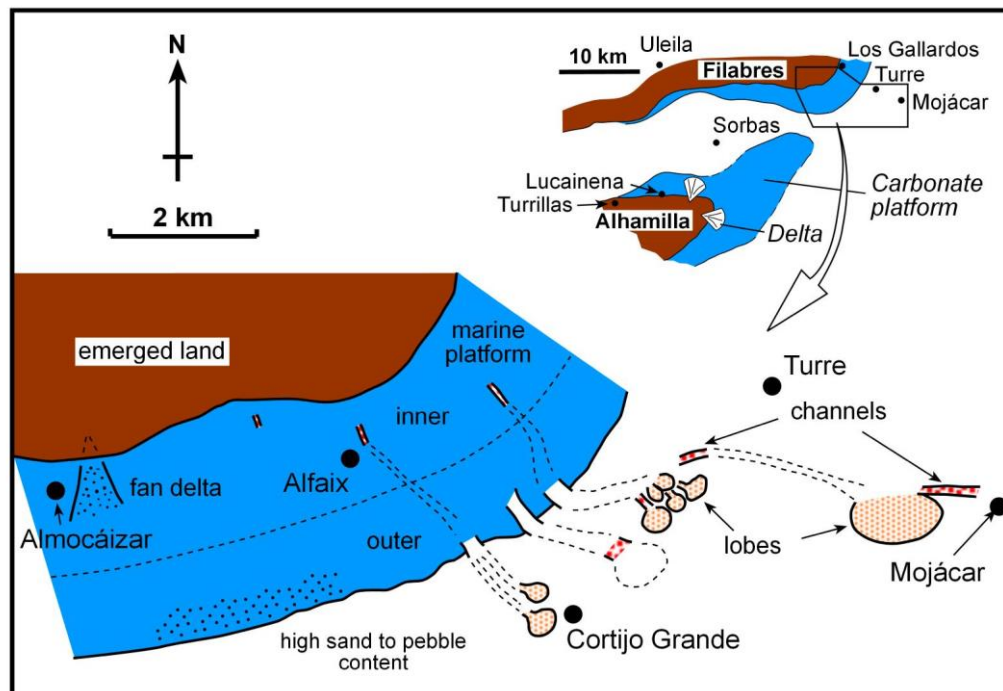


Figure 38. Latest Tortonian palaeogeography of the Sorbas and Vera basins (after Braga and Martín, 1997). The enlarged area corresponds to the south-easternmost corner of the northern platform. Important features include a fan delta to the north-west, channels within the platform area and a channel and lobe system further to the east. Channels cross-cut the platform and supplied both coarse siliciclastic and carbonate sediments to the lobes located within the basin. Reconstruction is based on preserved outcrops (solid lines) and inferred trends (dashed lines) (after Braga et al. 2001).

Coastal sediments



Photograph 232.- Beach deposits exhibiting low-angle, parallel lamination (Vera Basin. Alfaix: Río Jauto).

Channels cross-cutting shoals

Photograph 233.- Coarse-grained (clasts up to boulder in size), debris-flow conglomerate infilling a channel excavated into cross-bedded, bioclastic sandstones (microconglomerates) (Vera Basin. Rambla Alcornia). →



Photograph 234.- Strings of boulder sized, debris-flow conglomerates cross cutting bioclastic sandstones (microconglomerates). The upper one is the most continuous (Vera Basin. Rambla Alcornia).

Channels at the platform-edge

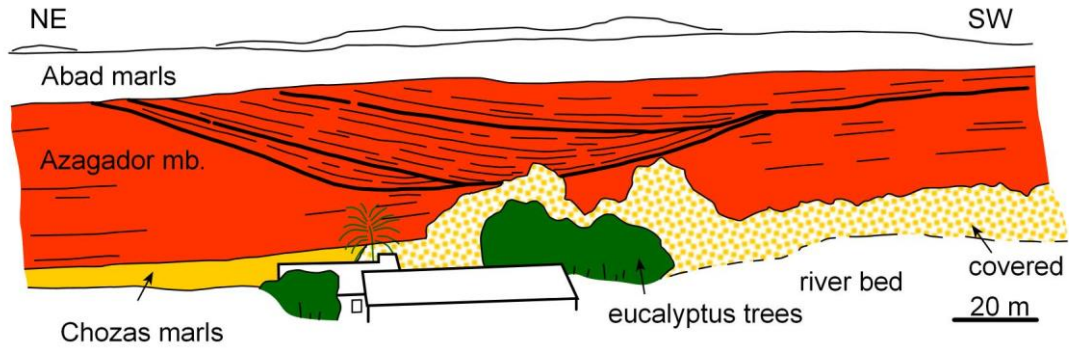


Figure 39. A major channel eroding outer platform sediments and filled later, once it was abandoned, by new platform sediments at three different stages. Molino de la Higuera outcrop (after Braga et al. 2001).



Photograph 235.- Channel excavated at the platform edge exhibiting a polifasic infilling (Vera Basin. Molino de la Higuera).



Photograph 236.- Beds at the channel margin dip strongly to the inside of the channel. Channel-infill beds unconformably overlie subhorizontal platform sediments (Vera Basin. Molino de la Higuera).

Slope channels

Photograph 237.- Channel scouring into marls. Channel-infill sediments exhibit lateral-accretion structures (Vera Basin. Mojácar: Cortijada de Joancho). →



Photograph 238.- Scour and fill structure within a channel (Vera Basin. Mojácar: Cortijada de Joancho).

Deep-water lobes and submarine channels

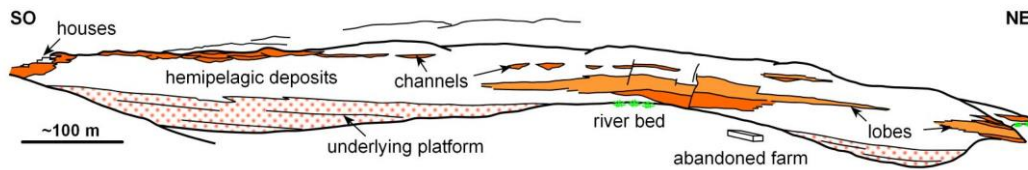
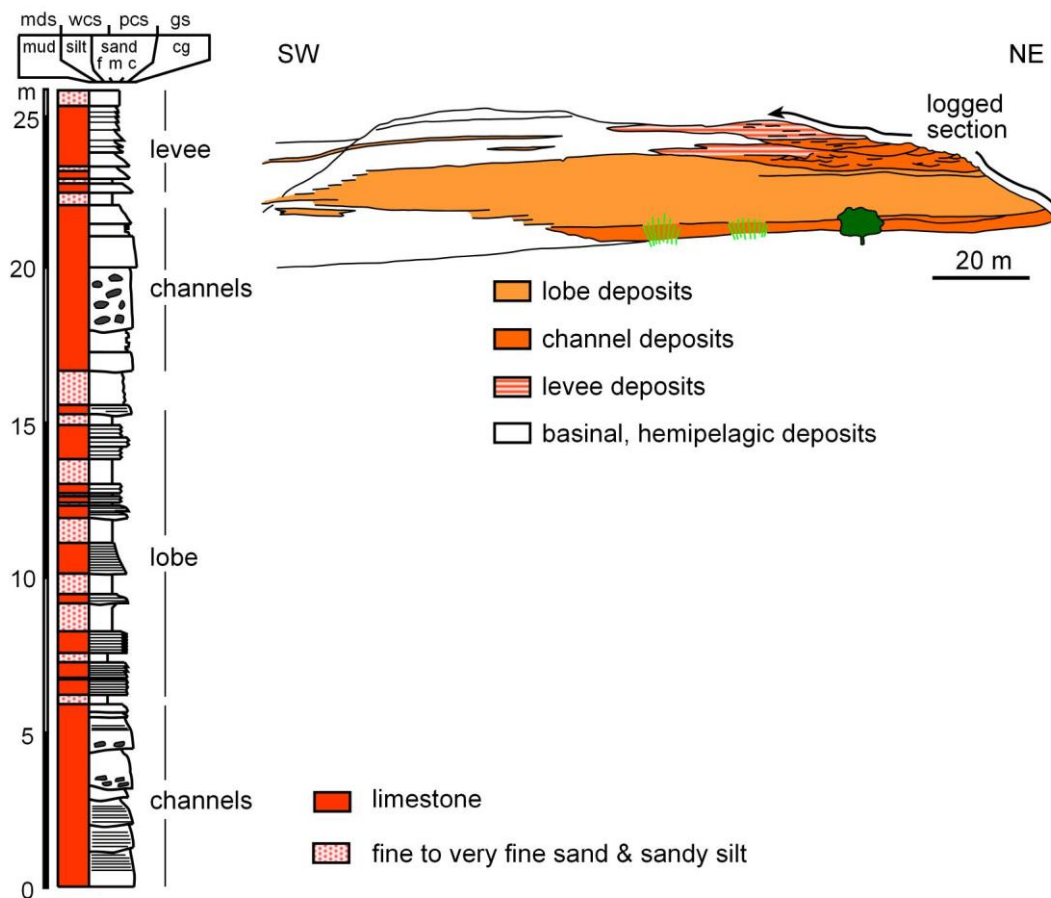


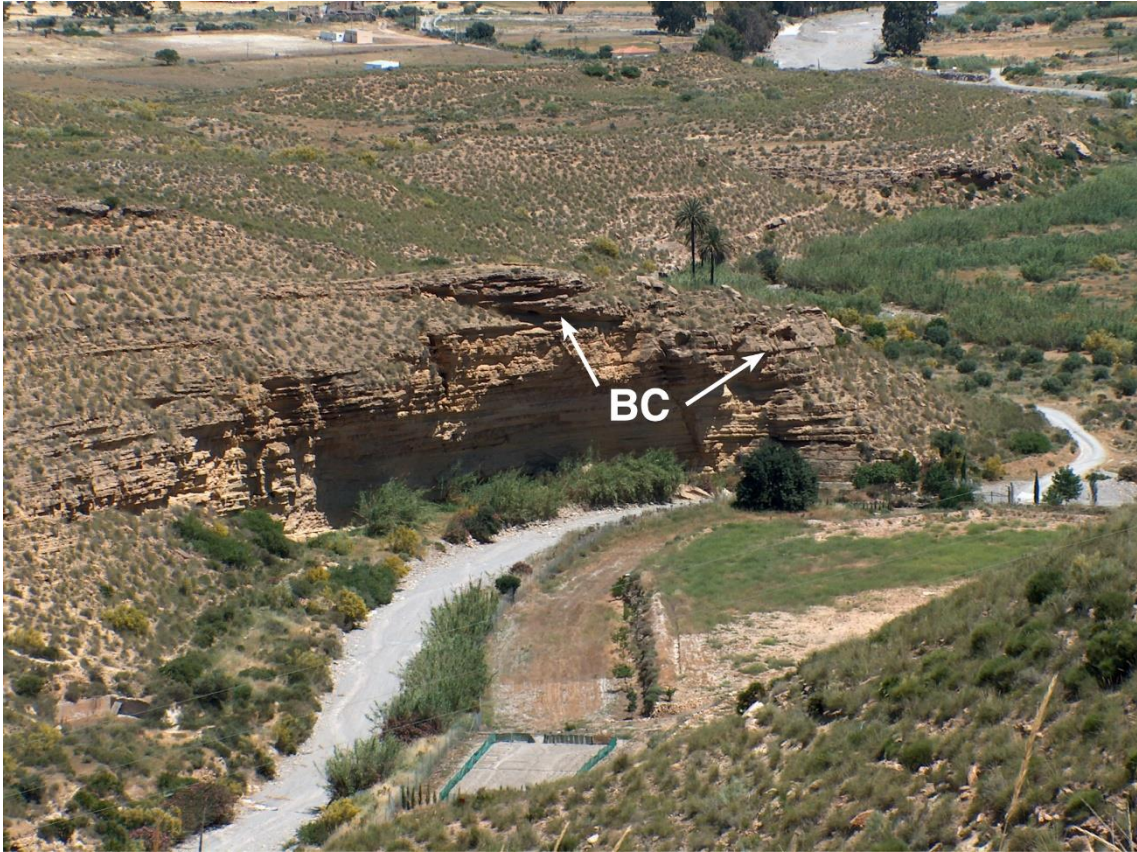
Figure 40. (a): A sketch of channel and lobe outcrops along the western side (left margin) of Barranco del Gitano, in the area of Cortijo Grande (after Braga et al. 2001).



(b): Cortijo del Estrecho section at Barranco del Gitano and detailed log of its north-eastern margin. The uppermost sediments correspond to levee deposits laterally connected to the upper channel system. Mds, mudstone; wcs, wackestone; pcs, packstone; gs, grainstone; f, fine sand; m, medium; c, coarse sand; cg, conglomerate (after Braga et al. 2001).

Photograph 239.- Small lobe deposit cross-cut by a big channel at its upper part. White arrows point to the base of the channel (BC) (Vera Basin. Turre: Barranco del Gitano).

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Photograph 240.- Close view of the coarse conglomerate at the basal part of the channel. Cobble-sized conglomerate clasts stand out (Vera Basin. Turre: Barranco del Gitano).



Photograph 241.- Some of the conglomerate clasts are from the basement (Palaeozoic schists and Triassic carbonates). Others are from older Miocene limestones (marly limestones) (Vera Basin. Turre: Barranco del Gitano).



Photograph 242.- Limestone (marly limestone) clasts are frequently bored (Vera Basin. Turre: Barranco del Gitano).



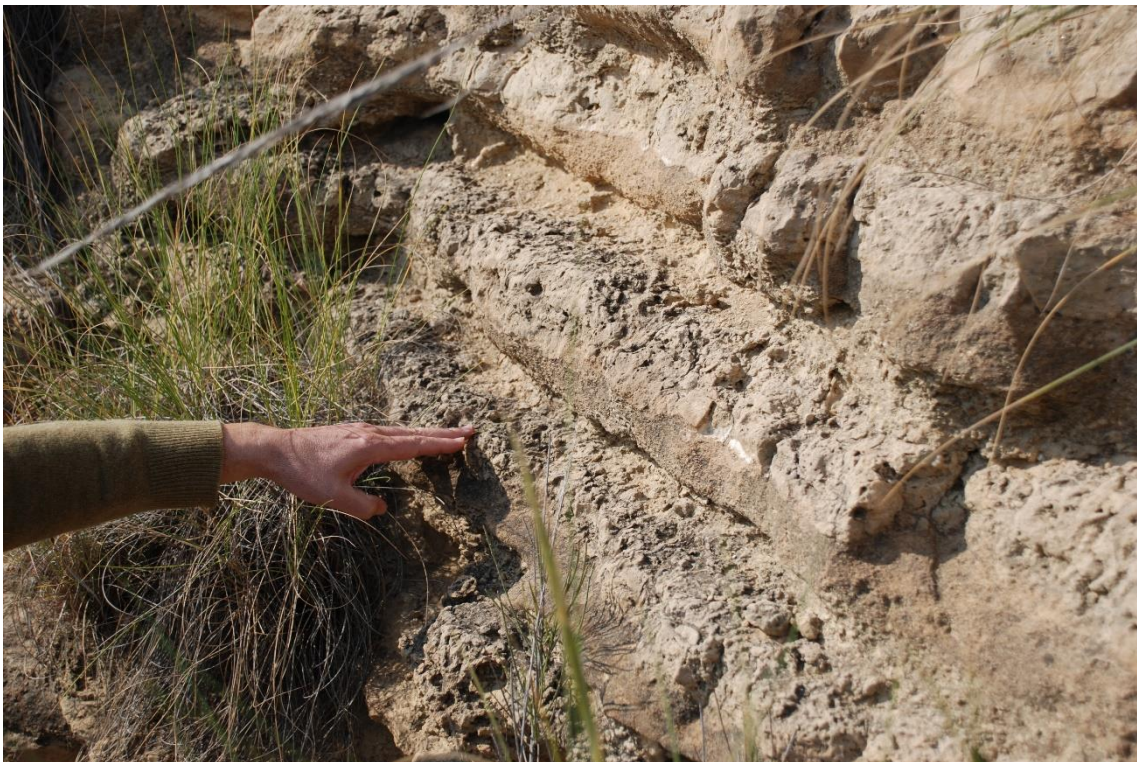
Photograph 243.- Channel-margin (levée) deposits are well-bedded, fine-grained turbidites (Vera Basin. Turre: Barranco del Gitano).



Photograph 244.- Lobe beds are laterally persistent for some distance (Vera Basin. Turre: Barranco del Gitano).



Photograph 245.- Thick limestone, lobe beds are made up of amalgamated turbidites. Their most conspicuous structure is horizontal lamination (Vera Basin. Turre: Barranco del Gitano).



Photograph 246.- The upper part of the turbidite layers is frequently bioturbated (Vera Basin. Turre: Barranco del Gitano).



Photograph 247.- Some of the burrows are exceptionally preserved as casts at the base of the overlying turbiditic bank (bed) (Vera Basin).



Photograph 248.- Well-stratified, laterally-persistent beds are common features in major lobe deposits (Vera Basin. Turre: Cortijo Gátar).



Photograph 249.- Major banks are made up of minor, lobe-shaped amalgamated turbidite layers (Vera Basin. Turre: Cortijo Gátar).



Photograph 250.- Coralline-algal fragments and siliciclastic grains are major components in the lobe sediments (Vera Basin. Turre: Cortijo Gátar).

The Upper Pliocene conglomerate deltas

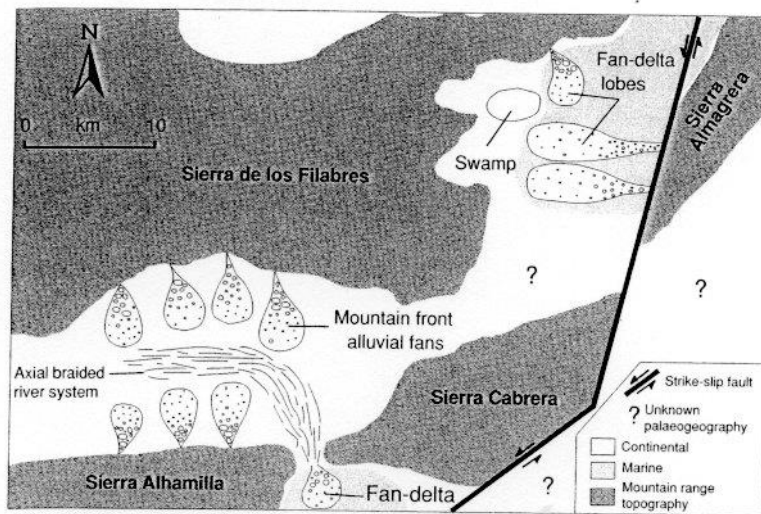


Figure 41. Upper Pliocene palaeogeography of the Sorbas and Vera basins showing distribution of major alluvial fans, fan-deltas and deltas (after Mather and Stokes, 2001).

The delta lobes



Photograph 251.- The "Espíritu Santo" delta. Delta lobes prograding to the West (Vera Basin, Vera).



Photograph 252.- Cross section of a prograding delta lobe on top of basinal marls. Inclined, foreset (delta-slope) layers stand out (Vera Basin. Vera).



Photograph 253.- Inclined, foreset (delta-slope) conglomerate (sandstone) layers covered by horizontal, topset (delta flood-plain) silts and conglomerates (Vera Basin. Vera).

The interdistributary bays



Photograph 254.- Oyster bank embedded in silts (Vera Basin).

RECOMMENDED ITINERARY:

Itinerary 12.- Alfaix-Rambla Alcornia-Molino de la Higuera-Barranco del Gitano-Cortijo de Gátar- Cortijada de Joancho

Most stops are by the road. It can be done by car with only some small walking.

Main subjects: Redeposited temperate carbonates from the Tortonian-Messinian transition. Submarine channel and lobe system.

Duration: One day.

Location map



Stop 1.- Alfaix:

Main features: 232.

Stop 2.- Rambla Alcornia:

Main features: 233 and 234.

Stop 3.- Molino de la Higuera (La Higuera windmill):

Main features: 235 and 236.

Stop 4.- Barranco del Gitano (El Gitano ravine):

Main features: 239, 240, 241, 242, 243, 244, 245 and 246.

Stop 5.- Cortijo de Gátar:

Main features: 248, 249 and 250.

Stop 6.- Cortijada de Joancho:

Main features: 237 and 238.